U.S. Army Yuma Proving Ground

Boundaries:

The Yuma Proving Ground (YPG) is located 32 miles northeast of Yuma, Arizona, and occupies approximately 870,000 acres in Yuma and La Paz counties. The site is bounded on the west by the Colorado River and on the south by the Gila River. The U-shaped YPG is approximately 1,300 square miles in area and extends approximately 60 miles north-south and 50 miles east-west.

Site History:

- YPG was first used by the military in 1942 for training desert troops. The mission changed in January 1943, when the site began to be used as a testing ground for bridges and river crossing equipment, boats, vehicles, and well drilling equipment under the designation of Yuma Test Branch, Corps of Engineers.

- In October 1947, the site was designated the Engineering Research and Development Laboratories, Yuma Test Branch, Sixth Army, but was later deactivated in January 1950 because of the military austerity program.

- The YPG was again reactivated in April 1951 as Yuma Test Station for desert environmental testing of equipment ranging from tanks to water purification units, and was assigned to the U.S. Army Material Command and renamed Yuma Proving Ground in 1962.

- YPG's current mission is to use advanced technology to carry out sophisticated tests of aircraft armament systems, air delivery systems, and tank-automotive equipment.

- In 1980, YPG submitted an application to the Arizona Department of Health Services (ADHS) for a Resource Conservation and Recovery Act (RCRA) permit as a treatment, storage and disposal facility, with subsequent amendments in 1986 and 1988. Several solid waste management units (SWMU) were operated under the permit.

- In July 1993, YPG initiated discussions with ADEQ with regards to the investigation of YPG's top ten SWMUs. In 1996, ADEQ and YPG agreed on the management strategy for the SWMU's which will involve investigation and cleanup under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

- In 1997, the EPA conducted a RCRA facility assessment site inspection of the SWMUs at YPG and recommended response action for 51 SWMUs and six Areas of Concern (AOCs), including 14 of the 19 SWMUs.

- The U.S. Army initiated a remedial investigation (RI) of YPG sites in 1998 as part of the Department of Defense (DoD) Installation Restoration Program (IRP) and identified 19 units for investigation under the RI/feasibility study (FS) CERCLA process. The sites

were organized into four operable units based on their proximity to the main post at YPG and/or opportunities for rapid and similarity for cleanup. The RI report was finalized in July 2002.

- The YPG did not qualify for placement in the National Priorities List (NPL), but regulatory oversight is provided by ADEQ under the IRP.

- Several removal actions have been conducted at YPG, as well as interim remedial action involving soil vapor extraction at Building 506 underground storage tank (UST) release, and at the Fuel Bladder Test Area (FBTA). This site was designated for immediate investigation by YPG due to the determination that up to 500,000 gallons of fuel may have been released at the site between 1965 and 1975. Analyses of groundwater samples from monitoring wells installed during ongoing investigation of the site have shown evidence of petroleum and petroleum by-products.

Site Status:

- Environmental investigations and cleanup continue at YPG under the auspices of the Army's Installation Restoration Program (IRP).

- At the Former Waste Disposal Area (FWDA), a fence to limit access to the site was erected as an engineering control/interim remedial action for the site.

- Reports for the implementation of lab and feasibility testing of in-situ ozone treatment of petroleum hydrocarbons for building 560, remedial investigation for selected sites, as well as the quality assurance project plan addendum No. 4 have been reviewed and approved by ADEQ in 2004.

- ADEQ approved a decision document proposing remedial action for vadose zone treatment at the fuel bladder test site (YPG-10) in 2005.

- Soil vapor extraction technology has been ongoing at the FBTA since July 2000.

- ADEQ is currently reviewing remedial action decision document for 14 solid waste management units (SWMUs).

- For some sites at YPG, data are sufficient to indicate that a remedial response is warranted. Studies are underway at these sites to determine the appropriate response strategy. For seven sites, additional arsenic background samples have been taken and land use controls have been implemented.

- YPG and ADEQ are currently working on the Final Site Inspection Work Plan for the Mortar Impact Area.

Site Hydrogeology:

- The geology of YPG is characterized by wide, gently sloping plains formed by late Tertiary and Quaternary age basin-fill deposits broken by sharply rising mountain ranges composed mainly of Cretaceous and Quaternary age intrusives and volcanics.

- Groundwater exists in two aquifers beneath YPG; a shallow unconfined aquifer in alluvial deposits, and a deep aquifer in consolidated volcanic rocks. The depth to groundwater ranged from 30 feet below ground surface (bgs) in Well X to 750 feet bgs in Well M. Potentiometric surface maps indicate the direction of groundwater flow is southwest to the Colorado and Gila Rivers. The groundwater gradient (i.e., change in water level with respect to distance) is about four to five ft/mi upgradient of the major pumping wells, and less than about four feet/mile near the rivers. Near the rivers the groundwater elevation becomes shallower, merging with subflow of the rivers, and may be within ten ft of the surface in flood plain deposits.

- Hydraulic conductivity ranged from 83 to 902 gallons per day per square foot (gpd/ft_2) for the alluvial wells, and about 56 gpd/ft^2 for the consolidated rock and 1,245 gpd/ft^2 for the floodplain deposits. Reasonable values for the storage coefficient ranged from ten to 15% for the alluvium, 20 to 30% for the flood plain deposits, and one to five percent for the consolidated rock.

Contaminants:

The current contaminants of concern at the site include petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals, in addition to propellants, explosives, and pyrotechnics (PEP). Contaminants of concern at the site may change as new data become available.

Public Health Impact:

Most of the contaminated sites are fenced and public access is prohibited. Contaminated groundwater is limited to the site boundaries. There is no risk to the public drinking water supply wells of Yuma.

Community Involvement Activities:

A community involvement plan has been developed for the YPG site.

Information Repository:

Interested parties can review site information at the ADEQ main office located at 1110 West Washington Street, Phoenix. Site information is available for review with 24 hour notice on Monday through Friday from 8 a.m. to 5 p.m. To arrange for a time to review the public site file, please call the ADEQ Records Management Center (602) 771-4380 or (800) 234-5677 (Arizona toll free).

Contacts:

Name	Phone/Fax	E-mail
Harry Hendler, ADEQ Project Manager	(602) 771-4609*/ (602) 771-4272	hh3@azdeq.gov

*In Arizona, but outside the Phoenix area, call toll-free at (800) 234-5677.